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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/597,525	08/12/2008	Russell Keene	W-355-6-7-02	2337

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EXAMINER
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MCCALISTER, WILLIAM M

ART UNIT	PAPER NUMBER
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3753

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/597,525	<b>Applicant(s)</b> KEENE ET AL.	
	<b>Examiner</b> WILLIAM MCCALISTER	<b>Art Unit</b> 3753	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 02 December 2010.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-11, 13-24, 26-36, 38-44, 46, 47 and 49-61 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11, 13-24, 26-36, 38-44, 46, 47 and 49-61 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 12/2/2010 has been entered.

2. Claims 12, 25, 37, 45 and 48 have been cancelled. Claims 1-11, 13-24, 26-36, 38-44, 46, 47 and 49-61 are pending.

### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 46 and 47 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 46 was amended to depend from claim 38, and as such there is no antecedent basis for "the first and second passage of the pin valve seat". Claim 38 introduces "first and second portions of the fluid channel".

***Claim Rejections - 35 USC § 102***

5. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

6. Claims 1-9, 11 and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Taurisano (US 1,921,895).

Regarding claim 1, Taurisano discloses a pin valve assembly comprising:

a pin block (58, 80) housing a valve pin (86);

a fluid plate (60) with a fluid channel (68, 70) for fluidically communicating with the valve pin;

a fitting block (56) housing a fitting (78) for fluidic communication with the fluid plate and for fluidic communication with fluidic components; and

a pin valve seat (66) in communication with the fluid channel between a first portion (68) of the fluid channel and a second portion (70) of the fluid channel, and aligned to receive the valve pin, wherein when the valve pin is seated in the pin valve seat (as shown in FIG 1), the flow of fluid in the fluid channel of the fluid plate is substantially blocked from flowing between the first and second portions of the fluid channel (i.e., the valve is closed).

Regarding claim 2, Taurisano discloses a fitting port as claimed (the female threads at 76, 78).

Regarding claims 3-5, all of Taurisano's elements are integrated when the device is assembled.

Claims 6-8 are considered clearly met in view of the mapping of the elements of claim 1.

Regarding claims 9 and 15, Taurisano discloses a pin (86, 62, 64) with distal and proximal ends disposed axially within a housing (80).

Regarding claims 11 and 15, Taurisano discloses an actuator (98) as claimed.

7. Claims 18, 22, 24, 26, 27, 32, 33, 34 and 58 are rejected under 35 U.S.C. 102(b) as being anticipated by Hammock (US 2,589,373).

Regarding claim 18, Hammock discloses a pin valve assembly comprising:

- a pin block (15) for housing a plurality of pin valves (31, 32, 37);
- a fluid plate (14) with a fluid channel (41, and the interior space defined by member 40) for fluidically communicating with the pin valves;
- a fitting block (11) *for* housing fittings for fluidic communication with the fluid plate and for fluidic communication with fluidic components (member 11 is capable of housing fittings as claimed); and

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one or more pin valve seats (the interior surface of member 40 which seats member 37) in communication with the fluid channel between a first portion (41) of the fluid channel and a second portion (the interior space defined by member 40) of the fluid channel, a pin valve seat of the one or more pin valve seats aligned to receive a valve pin (37) of the pin valves, wherein when the valve pin (37) is seated in the pin valve seat, the flow of fluid in the fluid channel of the fluid plate is substantially blocked from flowing between the first and second portions of the fluid channel (i.e., the valves are closed).

Regarding claim 22, all components of Hammock's device are integrated when assembled.

Regarding claim 24, Hammock discloses the pin valve seats to be fitted to the pin valves (see FIG 1).

Regarding claim 26, Hammock discloses wherein each valve pin is housed in a standardized housing (27) comprising a means (29) for actuation for axially moving the valve pin to sit on the pin valve seat and substantially block fluid flow from a downstream location (i.e., to close the valve) or remove the pin from the pin valve seat and provide for fluid flow to the down stream location (i.e., to open the valve).

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Regarding claim 27, Hammock discloses the valve pin housing (27) to be releasably fitted to the pin block (15) (via members 26 and 28).

Regarding claim 32, Hammock discloses the fitting block to be coupled to the pin block with the fluid plate positioned between the fitting block and the pin block (see Fig. 1).

Regarding claim 33, Hammock discloses a pin (31) axially disposed in a housing (27) as claimed.

Regarding claim 34, Hammock discloses an actuator (the wrench of col. 3 line 40) as claimed.

Regarding claim 58, the claimed method would necessarily be performed during the normal and usual provision and operation of Hammock's device.

***Claim Rejections - 35 USC § 103***

8. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

9. Claims 1-9, 11, 13, 15, 19-21, 23, 35, 38-44, 46, 47, 49, 55 and 56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hammock alone.

Regarding claims 1 and 38, Hammock discloses a pin valve assembly comprising:

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a pin block (19) housing a plurality of valve pins (31, 32, 37);

a fluid plate (14, 40) with a fluid channel (41, and the interior space of member 40) having channel ends (the tops and bottoms thereof) for fluidically communicating with the valve pin;

a fitting block (11) *including* a fittings (threads 12) *for* fluidic communication with the fluid plate and for fluidic communication with fluidic components (the fitting block is capable of such communication); and

a plurality of pin valve seats (the surfaces of members 40 which seat members 37) in communication with the fluid channels between a first portion of the fluid channel (41) and a second portion of the fluid channel (the interior space of member 40), the pin valve seats aligned to receive the valve pins (37), wherein when the valve pin is seated in the pin valve seat, the flow of fluid in the fluid channel of the fluid plate is substantially blocked from flowing between the first and second portions of the fluid channel (i.e., the valves close).

Hammock discloses the fitting block (11) to *include* the fittings (male threads 12) for connection to a flow line (col. 1 lines 45-50), but does not disclose the fitting block to *house* the fittings (i.e., to have female threads, consonant with Applicant's "fitting" 210 of Figure 2). However, it would have been obvious to use female threads instead of male threads with the fitting block (11) to accommodate connection to a flow line which has male threads. Further regarding claim 38, it would have been obvious to duplicate the nipple 12 for communication with more than flow lines. This is seen as especially true



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since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 70.

Regarding claim 2, Hammock discloses a fitting port (the interior flow space of the nipple at 12) aligned with the fitting.

Regarding claims 3-5 and 39-40, all components of Hammock's device are integrated during assembly.

Regarding claim 6, Hammock discloses the pin valve seat to be fitted to the valve pin (when the valve is closed).

Regarding claims 7, Hammock discloses wherein the fitting block is coupled to the pin block with the fluid plate positioned between the pin block and fitting block (see Fig. 1).

Regarding claim 8, Hammock discloses wherein the fitting block is coupled to the pin block by a screw connection (17).

Regarding claim 9, Hammock discloses a [second] pin valve (see FIG 1) having a pin with distal and proximal ends substantially axially disposed in a housing.

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Regarding claim 11, Hammock discloses wherein the valve pin is actuated by an actuator (the wrench, col. 3 line 40) to provide for a distal end of the valve pin (the bottom) to sit in the pin valve seat substantially sealing the fluid channel and removing the distal end of the pin valve from the pin valve seat opening the fluid channel.

Regarding claim 13, Hammock discloses a ring seal (34) above the distal end and within a pin housing (27) for sealing.

Regarding claim 15, Hammock discloses wherein each valve pin is in a housing (27) comprising an actuator (the wrench, col. 3 line 40) for axially moving the valve pin to sit on the plate valve seat and substantially block fluid flow from a downstream location (i.e., to close the valve) or remove the pin valve seat and provide for fluid flow to the downstream location (i.e., to open the valve).

Regarding claim 19, see the obviousness analysis of claim 1 immediately above regarding the use of a female thread.

Regarding claim 20, see the analysis of claim 2 immediately above.

Regarding claims 21 and 23, see the analyses of claims 3-5 immediately above.

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Regarding claims 35, 47 and 56, pneumatic actuators were notoriously well known in the art at the time of invention and it would have been obvious to pneumatically actuate Hammock's pin valves to mechanize the control process.

Regarding claim 41, Hammock discloses the valve pins to be aligned with the channels of the fluid plate (see FIG 1).

Regarding claim 42, Hammock discloses two channels, not six. It would have been obvious to use any number of channels and valves in Hammock's device, since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 70.

Regarding claim 43, Hammock discloses the pin valves to align with (i.e., to be parallel to) two channels ends (the tops and bottoms of the channels) of the fluid plate.

Regarding claim 44, Hammock discloses each of the pin valve seats to comprise a first passage (the conical portion) for communication with a channel end and a second passage (the straight portion) for communication with another channel end.

Regarding claim 46 as understood, Hammock discloses the valve pin to be actuated (at 47) to block the first and second portions of the fluid channel (the top and bottom thereof).

Regarding claim 49, see the analysis of claim 26 above.

Regarding claim 55, see the analysis of claim 11 above.

10. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hammock in view of Cooper et al. (US 5,713,333)

Hammock discloses the claimed invention except wherein the distal end of the pin has a diamond-like carbon coating. Cooper et al., however, teach the use of amorphous (diamond-like) carbon coatings of moving parts of valves for the purpose of providing low coefficients of friction and high thermal expansion coefficients and high hardness similar to that of ceramics (Col. 8 Lines 3-9). Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the pin disclosed by Hammock so that the distal end has a diamond-like carbon coating, as taught by Cooper et al.

11. Claims 14, 16, 17, 36, 57 and 59-61 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hammock in view of Hauck (US 6,012,487).

Regarding claims 14, 16, 36, 57 and 59-61, Hammock discloses the claimed invention except wherein the fluidic components are an HPLC system pump syringe, pump,

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column sample loop and sample syringe. Hauck, however, teaches that a "typical environment" in which such valves are used in an HPLC system with fluidic components including HPLC system pump syringe (Col. 1 Lines 30-32), pump 34, column 42, sample loop 103 and sample syringe 39. Given that the Hauck teaches that an HPLC system pump syringe, pump, column sample loop and sample syringe are a typical HPLC environment, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the fluidic components disclosed by Hammock to comprise an HPLC system pump syringe, pump, column sample loop and sample syringe, as taught by Hauck, for the purpose of using the fluid delivery system in a liquid chromatography application.

Regarding claim 17, Hammock discloses the claimed invention except for the material from which the components are made. It would have been obvious to one having ordinary skill in the art at the time of invention to form the seals from PEEK, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice.

*In re Leshin*, 125 USPQ 416.

12. Claims 28-31 and 50-54 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hammock in view of Wylie et al. (US 5,950,674), where Wylie is taken with Achener et al. (US 4,045,343)

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Hammock discloses the claimed invention except wherein the fluid plate is stainless steel with a flat tetrafluoroethylene (TFE) shim/coating on its surface that is impinged by the pin and the fitting block. Wylie et al, however, teach the use a selector valve having fluid plates 120 which are made of stainless steel coated with a highly inert material for the purpose of providing a strong non-corroding part for application in which the controlled fluid must come into contact with inert materials. Achener et al. teach that Teflon (a trade name of PTFE) is a tough flexible material that is self lubricating (Col. 10 Lines 31-44). Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the fluid plate disclosed by Hammock to be stainless steel with a flat coating, as taught by Wylie et al., on its surface that is impinged by the pin and the fitting block, wherein the coating is tetrafluoroethylene (TFE), as taught by Achener et al., for the purpose of providing a strong non-corroding part that is tough, flexible and self lubricating, for application in which the controlled fluid must come into contact with inert materials. (Regarding claim 54, see the analysis of claim 7 above.)

### ***Response to Arguments***

13. Applicant's arguments have been considered but are moot in view of the new ground(s) of rejection (i.e., the interpretation of Hammock which meets the claimed limitations (i.e., the first and second portions of the passage in the valve plate between which the valving occurs) is explained in the body of the rejection). Also note that Taurisano discloses these limitations.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to WILLIAM MCCALISTER whose telephone number is (571)270-1869. The examiner can normally be reached on m-f, 9-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Hepperle can be reached on (571)272-4913. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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2/3/2011